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Thermodynamic properties of dimethylene urethane

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Abstract

© 2015 Pleiades Publishing, Ltd. Abstract Enthalpies of the combustion and formation of crystalline dimethylene urethane (oxazolidin-2-one) are determined via combustion calorimetry. The enthalpy of sublimation is determined via the transpiration method, and the enthalpy of fusion is found by means of differential scanning calorimetry. The temperature dependence of the saturated vapor pressure is measured in the range of 323-353 K. Thermodynamic functions in the ideal gas state are calculated using the rigid rotator-anharmonic oscillator model in the range of T = 298.15-1500 K.

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Keywords

anharmonic frequencies, dimethylene urethane, enthalpy of formation, entropy, free energy, heat capacity, oxazolidin-2-one, rigid rotator-anharmonic oscillator, saturated vapor pressure